

**WEST**

Generate Collection

Print

L1: Entry 2 of 2

File: USPT

Dec 29, 1998

DOCUMENT-IDENTIFIER: US 5854204 A

TITLE: A.beta. peptides that modulate .beta.-amyloid aggregation

Detailed Description Paragraph Right (118):

The recombinant expression vectors of the invention can be designed for expression of peptide compounds in prokaryotic or eukaryotic cells. For example, peptide compounds can be expressed in bacterial cells such as *E. coli*, insect cells (using baculovirus expression vectors) yeast cells or mammalian cells. Suitable host cells are discussed further in Goeddel, *Gene Expression Technology: Methods in Enzymology* 185, Academic Press, San Diego, Calif. (1990). Alternatively, the recombinant expression vector may be transcribed and translated in vitro, for example using T7 promoter regulatory sequences and T7 polymerase. Examples of vectors for expression in yeast *S. cerevisiae* include pYepSec1 (Baldari et al., (1987) *EMBO J.* 6:229-234), pMFa (Kurjan and Herskowitz, (1982) *Cell* 30:933-943), pJRY88 (Schultz et al., (1987) *Gene* 54:113-123), and pYES2 (Invitrogen Corporation, San Diego, Calif.). Baculovirus vectors available for expression of proteins or peptides in cultured insect cells (e.g., Sf 9 cells) include the pAc series (Smith et al., (1983) *Mol. Cell. Biol.* 3:2156-2165) and the pVL series (Lucklow, V. A., and Summers, M. D., (1989) *Virology* 170:31-39). Examples of mammalian expression vectors include pCDM8 (Seed, B., (1987) *Nature* 329:840) and pMT2PC (Kaufman et al. (1987), *EMBO J.* 6:187-195). When used in mammalian cells, the expression vector's control functions are often provided by viral regulatory elements. For example, commonly used promoters are derived from polyoma, Adenovirus 2, cytomegalovirus and Simian Virus 40.

Detailed Description Paragraph Right (120):

A recombinant expression vector comprising a nucleic acid encoding a peptide compound that alters aggregation of natural .beta.-AP can be introduced into a host cell to thereby produce the peptide compound in the host cell. Accordingly, the invention also provides host cells containing the recombinant expression vectors of the invention. The terms "host cell" and "recombinant host cell" are used interchangeably herein. It is understood that such terms refer not only to the particular subject cell but to the progeny or potential progeny of such a cell. Because certain modifications may occur in succeeding generations due to either mutation or environmental influences, such progeny may not, in fact, be identical to the parent cell, but are still included within the scope of the term as used herein. A host cell may be any prokaryotic or eukaryotic cell. For example, a peptide compound may be expressed in bacterial cells such as *E. coli*, insect cells, yeast or mammalian cells. Preferably, the peptide compound is expressed in mammalian cells. In a preferred embodiment, the peptide compound is expressed in mammalian cells in vivo in a mammalian subject to treat amyloidosis in the subject through gene therapy (discussed further below). Preferably, the .beta.-amyloid peptide compound encoded by the recombinant expression vector is secreted from the host cell upon being expressed in the host cell.

**WEST**

Generate Collection

Print

L2: Entry 2 of 2

File: USPT

Dec 29, 1998

DOCUMENT-IDENTIFIER: US 5854204 A

TITLE: A.beta. peptides that modulate .beta.-amyloid aggregation

Detailed Description Paragraph Right (91):

In another approach for enhancing transport across the BBB, a peptidic or peptidomimetic modulator is conjugated to a second peptide or protein, thereby forming a chimeric protein, wherein the second peptide or protein undergoes absorptive-mediated or receptor-mediated transcytosis through the BBB. Accordingly, by coupling the modulator to this second peptide or protein, the chimeric protein is transported across the BBB. The second peptide or protein can be a ligand for a brain capillary endothelial cell receptor ligand. For example, a preferred ligand is a monoclonal antibody that specifically binds to the transferrin receptor on brain capillary endothelial cells (see e.g., U.S. Pat. Nos. 5,182,107 and 5,154,924 and PCT Publications WO 93/10819 and WO 95/02421, all by Friden et al.). Other suitable peptides or proteins that can mediate transport across the BBB include histones (see e.g., U.S. Pat. No. 4,902,505 by Pardridge and Schimmel) and ligands such as biotin, folate, niacin, pantothenic acid, riboflavin, thiamin, pyridoxal and ascorbic acid (see e.g., U.S. Pat. Nos. 5,416,016 and 5,108,921, both by Heinstein). Additionally, the glucose transporter GLUT-1 has been reported to transport glycopeptides (L-serinyl-.beta.-D-glucoside analogues of [Met5]enkephalin) across the BBB (Polt, R. et al. (1994) Proc. Natl. Acad. Sci. USA 91:7114-1778). Accordingly, a modulator compound can be coupled to such a glycopeptide to target the modulator to the GLUT-1 glucose transporter. For example, a modulator compound which is modified at its amino terminus with the modifying group Aic (3-(O-aminoethyl-iso)-choly, a derivative of cholic acid having a free amino group) can be coupled to a glycopeptide through the amino group of Aic by standard methods. Chimeric proteins can be formed by recombinant DNA methods (e.g., by formation of a chimeric gene encoding a fusion protein) or by chemical crosslinking of the modulator to the second peptide or protein to form a chimeric protein. Numerous chemical crosslinking agents are known in the (e.g., commercially available from Pierce, Rockford Ill.). A crosslinking agent can be chosen which allows for high yield coupling of the modulator to the second peptide or protein and for subsequent cleavage of the linker to release bioactive modulator. For example, a biotin-avidin-based linker system may be used.

Detailed Description Paragraph Right (118):

The recombinant expression vectors of the invention can be designed for expression of peptide compounds in prokaryotic or eukaryotic cells. For example, peptide compounds can be expressed in bacterial cells such as E. coli, insect cells (using baculovirus expression vectors) yeast cells or mammalian cells. Suitable host cells are discussed further in Goeddel, Gene Expression Technology: Methods in Enzymology 185, Academic Press, San Diego, Calif. (1990). Alternatively, the recombinant expression vector may be transcribed and translated in vitro, for example using T7 promoter regulatory sequences and T7 polymerase. Examples of vectors for expression in yeast S. cerevisiae include pYepSec1 (Baldari et al., (1987) EMBO J. 6:229-234), pMFa (Kurjan and Herskowitz, (1982) Cell 30:933-943), pJRY88 (Schultz et al., (1987) Gene 54:113-123), and pYES2 (Invitrogen Corporation, San Diego, Calif.). Baculovirus vectors available for expression of proteins or peptides in cultured insect cells (e.g., Sf 9 cells) include the pAc series (Smith et al., (1983) Mol. Cell. Biol. 3:2156-2165) and the pVL series (Lucklow, V. A., and Summers, M. D., (1989) Virology 170:31-39). Examples of mammalian expression vectors include pCDM8 (Seed, B., (1987) Nature 329:840) and pMT2PC (Kaufman et al. (1987), EMBO J. 6:187-195). When used in mammalian cells, the expression vector's control functions are often provided by viral regulatory elements.

For example, commonly used promoters are derived from polyoma, Adenovirus 2, cytomegalovirus and Simian Virus 40.

Detailed Description Paragraph Right (120):

A recombinant expression vector comprising a nucleic acid encoding a peptide compound that alters aggregation of natural .beta.-AP can be introduced into a host cell to thereby produce the peptide compound in the host cell. Accordingly, the invention also provides host cells containing the recombinant expression vectors of the invention. The terms "host cell" and "recombinant host cell" are used interchangeably herein. It is understood that such terms refer not only to the particular subject cell but to the progeny or potential progeny of such a cell. Because certain modifications may occur in succeeding generations due to either mutation or environmental influences, such progeny may not, in fact, be identical to the parent cell, but are still included within the scope of the term as used herein. A host cell may be any prokaryotic or eukaryotic cell. For example, a peptide compound may be expressed in bacterial cells such as E. coli, insect cells, yeast or mammalian cells. Preferably, the peptide compound is expressed in mammalian cells. In a preferred embodiment, the peptide compound is expressed in mammalian cells in vivo in a mammalian subject to treat amyloidosis in the subject through gene therapy (discussed further below). Preferably, the .beta.-amyloid peptide compound encoded by the recombinant expression vector is secreted from the host cell upon being expressed in the host cell.